

This document aims to track expectations for Design and Technology at Marsh Gibbon Church of England School.

What the National Curriculum says:

Key stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles] in their products

Key stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:

Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately
- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from

Key stage 2

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savory dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed

Objective	Year 1 and 2	Year 3 and 4	Year 5 and 6	More and most able
To design.	<ul style="list-style-type: none"> ➤ design purposeful, functional, appealing products for themselves and other users based on design criteria ➤ generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology 	<ul style="list-style-type: none"> ➤ use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ➤ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 	<ul style="list-style-type: none"> ➤ use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ➤ generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 	<ul style="list-style-type: none"> ➤ make design decisions, taking account of constraints such as time, resources and cost
	<u>Vocabulary</u> drawing, templates, mock-ups	<u>Vocabulary</u> annotated sketches, cross-sectional and exploded diagrams	<u>Vocabulary</u> annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	

Objective	Year 1 and 2	Year 3 and 4	Year 5 and 6	More and most able
To make.	<ul style="list-style-type: none"> ➤ select from and use a range of tools and equipment to perform practical tasks ➤ select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics ➤ Key Skills: <ul style="list-style-type: none"> a. Use scissors safely to cut paper and then card b. Join material using tape, glue and paper fasteners c. Use basic tools safely 	<ul style="list-style-type: none"> ➤ select from and use a wider range of tools and equipment to perform practical tasks accurately ➤ select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ➤ Key Skills: <ul style="list-style-type: none"> a. use different joining and cutting methods related to paper and card d. nets used in packaging, scoring card e. folds and flaps f. decorative techniques g. accurate cutting, measuring and folding h. control, pneumatic systems (pressure inflate, deflate. Input, output, pump) i. linkages and levers j. hinges and sliders k. use different joining and cutting techniques with paper and card scoring l. use simple mechanisms to achieve different 	<ul style="list-style-type: none"> ➤ select from and use a wider range of tools and equipment to perform practical tasks accurately ➤ select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities ➤ Key Skills: <ul style="list-style-type: none"> a Use bench hook/G-cramp/hack saw b Use equipment safely d Generate ideas e Plan what to do next f Select appropriate tools, materials, components g Explain choices h Produce annotated diagrams l Measure, mark out, cut and assemble j Use ICT for researching and designing k Techniques for reinforcing and strengthening materials 	<ul style="list-style-type: none"> ➤ produce appropriate lists of tools, equipment and materials that they need ➤ formulate step-by-step plans as a guide to making

		movements e.g. linear, rotary		
	<u>Vocabulary</u> cutting, shaping, joining and finishing levers, sliders, wheels and axles	<u>Vocabulary</u> series circuits incorporating switches, bulbs, buzzers and motors	<u>Vocabulary</u> gears, pulleys, cams, levers and linkages	

Objective	Year 1 and 2	Year 3 and 4	Year 5 and 6	More and most able
To evaluate.	<ul style="list-style-type: none"> ➤ explore and evaluate a range of existing products ➤ evaluate their ideas and products against design criteria 	<ul style="list-style-type: none"> ➤ investigate and analyse a range of existing products ➤ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ➤ understand how key events and individuals in design and technology have helped shape the world 	<ul style="list-style-type: none"> ➤ Investigate and analyse a range of existing products ➤ Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ➤ evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ➤ Apply their understanding of how to strengthen, stiffen and reinforce more complex structures ➤ understand and use mechanical systems in their products 	<ul style="list-style-type: none"> ➤ how much products cost to make ➤ how innovative products are ➤ how sustainable the materials in products are ➤ what impact products have beyond their intended purpose
	<u>Vocabulary</u> inventors, designers, engineers, chefs and manufacturer	<u>Vocabulary</u> inventors, designers, engineers, chefs and manufacturer	<u>Vocabulary</u> inventors, designers, engineers, chefs and manufacturer	

Objective	Year 1 and 2	Year 3 and 4	Year 5 and 6	More and most able
<p>To cook and apply the principles of nutrition and healthy eating.</p>	<ul style="list-style-type: none"> ➤ use the basic principles of a healthy and varied diet to prepare dishes ➤ understand where food comes from ➤ Key Skills: <ol style="list-style-type: none"> 1. Know properties of food – taste, texture and appearance 2. Prepare and combine ingredients into specific projects 3. Use basic tools safely 	<ul style="list-style-type: none"> ➤ understand and apply the principles of a healthy and varied diet ➤ cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet ➤ become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes] ➤ understand the source, seasonality and characteristics of a broad range of ingredients ➤ Key Skills: preparing food, cutting, grating etc 	<ul style="list-style-type: none"> ➤ Key Skills: <ol style="list-style-type: none"> 1. become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes] 2. understand the source, seasonality and characteristics of a broad range of ingredients ➤ Key Skills: <ol style="list-style-type: none"> 1. mixing/combining/shaping 2. weigh and measure accurately (time/dry ingredients, liquids) 3. Follow instructions 	<ul style="list-style-type: none"> ➤ that recipes can be adapted to change the appearance, taste, texture and aroma ➤ that different food and drink contain different substances – nutrients, water and fibre – that are needed for health
	<p><u>Vocabulary</u> cutting, peeling and grating</p>	<p><u>Vocabulary</u> peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p>	<p><u>Vocabulary</u> active and healthy, nutrition, diet, vitamins, minerals, fibre, balanced diet.</p>	

